

Remarks

The Examiner rejected claims 1, 8, 11, 14, 26-27, 30, 35, 41-42, 45, 52, 55, 57, 64, and 67 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 5,930,682, issued to Schwartz ("Schwartz").

The Examiner rejected claims 6, 43, 50-51, 61, 65 and 68 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 5,930,682, issued to Schwartz ("Schwartz") in view of U.S. Patent No. 6,308,077, issued to Walsh ("Walsh").

The Examiner rejected claims 1-6, 8-62, 64-68 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 6,411,825, issued to Csapo et al. ("Csapo") in view of U.S. Patent No. 6,163,294, issued to Talbot ("Talbot"), and U.S. Patent No. 5,982,322, issued to Bickley et al. ("Bickley").

The fundamental issues of a suggestion to combine or modify references under an obviousness rejection to arrive at the claimed invention are not met

The Examiner has failed to provide a reason to combine three prior art references or to modify the prior art references to reach the claimed invention. The Examiner has not made a prima facie case of obviousness.

1. The Examiner did not respond to or acknowledge Applicants remarks found on Applicants' prior Response, page 29. In the Examiner's prior Office action (pages 8-9) and current Office action (page 11), the Examiner stated that "[a]s to Applicant's argument regarding the location of the GPS at the upper portion of the tower, it is noted that the features upon which applicant relies . . . are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims."

As Applicants stated on page 29 of their prior Response, Applicants were responding with evidence showing why the Examiner's purported reason to modify a prior art reference was not correct, was not supported by the evidence, and was, in fact, not a reason to modify the reference. Applicants were arguing evidence, not the claim limitations. Obviously, the Examiners' purported reason to modify the reference to reach Applicants' claim limitations also was not a claim limitation. Applicants were putting forth evidence to show the purported reason to modify the reference to reach the claimed limitations was not viable. Evidence or

secondary considerations are relevant to the issue of obviousness and must be considered in every case in which they are present. MPEP 2141.

Further, Applicants pointed out in the prior Response that evidence of non-obviousness and secondary considerations were found in the application itself. There was a great need that was unfulfilled in the MMDS systems. The MMDS systems used towers with heavy cable. The MMDS systems did not use fiber. The invention was an advance in the art that led to cost savings in the equipment. The towers are now lighter and can sustain more antennas. See application, pages 4-6. These reasons are not claim limitations. These reasons are evidence of non-obviousness and secondary considerations that refute the statements of the Examiner. Additional secondary conditions are found in Applicants' application, including at pages 4-6.

Moreover, Applicants request that the claims be interpreted in light of the specification. Applicants are not requesting, and specifically do not want, limitations from the specification to be read into the claims. Reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification to narrow the claim. MPEP 2111.

Applicants incorporate all arguments and remarks from the prior Response relating to this subject and note that they were not addressed.

2. Several claims, such as claim 11, require a tower. Claim 11, for example, requires a timing source located at approximately the upper portion of the tower. The Examiner states that it is obvious to modify Schwartz to meet the claimed limitations because a tower on the roof-top of a building is well known in the art, and since Schwartz discloses an in-building distribution system for wireless communications, it would have been obvious to one of ordinary skill in the art to modify Schwartz for mounting the antenna or the central subsystem 22 on the tower of the building for utilizing the height of the tower to reduce the blockage of signals caused by the building itself or by surrounding tall objects.

There is no reason why Schwartz would modify its system to put the entire central subsystem on a tower or even on the roof. This does not provide any benefit to Schwartz, and it does not assist Schwartz in getting a better signal. In one embodiment, the central subsystem 22 of Schwartz is in the basement of the building and the receiving means is a cable interface. In another embodiment, the central receiving means receives wireless signals, and the receiving

means is an antenna that may be situated on a rooftop. There is no mention that the rest of the central subsystem 22 would be on the rooftop, and there is no benefit for it to be there.

As the Examiner stated, the Schwartz system is directed to an in-building system. Why would an in-building system be modified to reduce blockage of signals by the building itself, as alleged by the Examiner, when the system is in the building? The Examiner's purported reason to modify Schwartz to reach the claimed limitations is meaningless.

Schwartz does not speak of any need to reduce or eliminate blockage of any signals whatsoever. Schwartz does not teach a timing source configured to receive a stable timing source signal. Schwartz does not teach any timing source. Schwartz does not teach receiving GPS signals. Schwartz does not even mention GPS signals. Why would one skilled in the art modify Schwartz to locate a timing source at an upper portion of a tower if you don't even teach receiving timing source signals or GPS signals? The Examiner's purported reason to modify Schwartz to reach the claimed limitations is meaningless.

It is a stretch for the Examiner to add a tower to the Schwartz disclosure. It is a further stretch to then find that it must again be modified to locate the timing source at the upper portion of the tower. The Examiner adds substantive disclosure to Schwartz and does not provide substantive or acceptable reasons to modify Schwartz to arrive at those modifications.

3. The Examiner again states that the claims "just merely recite the location of the GPS or stable timing signals with respect to the tower position." Office Action, Page 12. Again, regardless of what the Examiner thinks about the claim limitations, they must still be taught in the cited references to sustain a rejection.

4. The Examiner states that "in the knowledge generally available to one of the ordinary skill of satellites, it would have been obvious to one skill [sic] in the art at the time the invention was made to modify Csapo, Talbot, and Bickley to either locate the PMU or placing the GPS receiver at a particular position (i.e. the top) of the tower that would reduce the blockage of GPS satellite signals caused by high or tall buildings." See current Office action, Page 12. Again, the Examiner did not provide reasoned findings. The Examiner only proposed the statement without any proof.

Further, Applicants' claims are not directed to satellites. While some of the references cited by the Examiner have GPS components, Applicants do not agree that the references cited by the Examiner or the Applicants' claims are in the art of "satellites."

5. The reason for modifying the references is itself meaningless, namely to reduce the blockage of GPS satellite signals caused by high or tall buildings. One skilled in the art of GPS knows that GPS signals are received from overhead satellites. The GPS receiver has a vertical line of sight to the GPS satellite. Unless the building is actually vertically over the antenna or other receiver, the building should not block the GPS signal. If the building is over the antenna or other receiver, obviously there would be no antenna or tower. See Inventors' Declaration, attached hereto as Exhibit A. The Examiner's reason to modify Schwartz to meet the claimed limitations is refuted by the evidence herein.

6. The Examiner stated that it would be obvious to add a tower to Bickley, Talbot, and Csapo to meet the claimed limitations. See current Office action, pages 7 and 12. There is no suggestion to modify any of the references to meet the claim limitations. There certainly is no suggestion to modify ALL of the references to meet these claim limitations, as suggested by the Examiner.

Bickley is a hand held, portable system. See the Bickley Abstract. There is no tower, and there is no reason to have a tower. Further, the Examiner's proposed modification would make the Bickley system unusable for its intended purpose. A user of the Bickley system cannot have a tower attached to its device. The Bickley device would no longer be portable or hand held. The proposed modification cannot render the prior art unsatisfactory for its intended purpose. MPEP 2143.01. Moreover, Bickley does not speak of buildings or any need to reduce or eliminate blockage of any signals whatsoever.

It is meaningless to say Csapo would move its PMU (mobile unit) to the top of a tower. Csapo would not work. Csapo would then have both the PRU (radio unit) and the PMU co-located. There would be no main unit and no separate radio unit, which is explicitly taught in Csapo. See Figure 9. Csapo would not longer be able to have multiple PRUs and one PMU, as taught by Figure 11. The Examiner's proposed modification would make the Csapo system unusable for its intended purpose. As noted by MPEP 2143.01, the proposed modification cannot render the prior art unsatisfactory for its intended purpose. Moreover, Csapo does not speak of buildings or any need to reduce or eliminate blockage of any signals whatsoever.

It is equally meaningless to say Talbot would move a GPS receiver to the top of a tower for any reason. Talbot does not teach a tower. Talbot discloses an electro-optical system

for a telescope. Moreover, Talbot does not speak of buildings or any need to reduce or eliminate blockage of any signals whatsoever.

Further, as stated above, Schwartz does not teach receiving GPS signals. Schwartz does not even mention GPS signals. Why would you need a tower to receive GPS signals if you don't teach receiving GPS signals? The Examiner's purported reason to modify Schwartz to reach the claimed limitations is meaningless.

7. The Examiner's purported reason to combine the references either was not provided or is not legally acceptable. The Examiner has not stated a specific reason to combine all of the references, as explained below.

The Examiner stated as the reason to combine all three of Csapo, Talbot, and Bickley that "[a]s to applicant's [sic] regarding the combination of Csapo, Bickley and Talbot's references, the examiner maintains his rejection on the ground that since Talbot, Bickley and Csapo are all directed to a communication device (or a transceiver) comprising a frequency synthesizer and a GPS receiver, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Talbot and Bickley to Csapo" for providing the claimed inventions. See current Office action, pages 5 and 9. The Examiner further stated "since it is not clear what reasoning or explanation is expected by Applicant, the details of the response from the previous action is repeated."

The Examiner's purported reason to combine the references is that all the references are directed to either a communication device or a transceiver. The Examiner cannot use this as a reason or suggestion to combine the references. "Because the references are in a similar art area" is not a reason or suggestion to combine the references. The Examiner's "suggestion" to combine is not valid under the MPEP or the Federal Circuit law. See, for example, MPEP 2143.01, *In re Kotzab*, 55 USPQ2d 1313 (Fed. Cir. 2000), and *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002).

The Examiner further stated it was not clear to the Examiner what reason or explanation is expected by Applicants. Applicants expect a reason or suggestion to combine or modify the references that is legally recognizable. The Examiner has not provided one to date.

8. The Examiner further claims that there is a teaching in the references themselves to combine or modify the references. However, there is no teaching or suggestion in any reference to modify any reference to reach the claimed limitations, and the Examiner has

never provided any proof that there is. There is no teaching or suggestion in any reference to combine all three references.

The Examiner claims that the teaching to combine all three of Csapo, Talbot, and Bickley is found in Bickley at col. 8, lines 1-19 and Talbot, Figs. 2-3 and col. 5, line 64-col. 6, line 9. However, the Examiner merely makes a citation to a disclosure in the references. The Examiner never states what the suggestion to combine is or how the citation actually provides the suggestion to combine all three references.

There is no suggestion in the Bickley citation to combine Bickley with two other references. There is no suggestion in this citation to combine Bickley with Talbot and Csapo to arrive at the claimed invention. Moreover, this citation speaks of a frequency synthesizer used to generate a variety of frequencies. The Examiner continues to ignore the fact that Applicants have not claimed a frequency synthesizer used to generate a variety of frequencies.

There is no suggestion in the Talbot citation to combine Talbot with two other references. There is no suggestion in this citation to combine Talbot with Bickley and Csapo to arrive at the claimed invention.

The Examiner finds that it is clear to one skilled in the art that they should combine all of the cited references to get the claimed invention. If the person skilled in the art was aware of all of the references, how is it clear that the person skilled in the art should combine Bickley with Talbot and then with Csapo to get the claimed inventions? Is there a single teaching in only one reference that would motivate this person to combine it with two other references? Is there a teaching in two of the references that would motivate this person to combine all of the references. The answer is no, and the Examiner has not shown otherwise.

9. The Examiner states that he can combine all of the references because all of the references disclose a communication device or a transceiver. See current Office action, pages 5 and 9. This simply is not a legitimate or legal reason to combine any two references, much less three references. It is not a reason to combine as recognized by the MPEP or any Federal Circuit law. See, for example, MPEP 2143.01, *In re Kotzab*, 55 USPQ2d 1313 (Fed. Cir. 2000), and *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002).

As previously pointed out by Applicants, to establish a *prima facie* case of obviousness, the PTO must show some objective teaching in the prior art that would lead that individual to combine the relevant teachings of the references. *In re Fine*, 5 USPQ2d 1596, 1598

(Fed. Cir. 1988). The PTO cannot rely on "common knowledge and common sense" to fulfill its obligation to cite references to support its conclusions. *In re Lee*, at 1434.

10. The Examiner states that he can combine all of the references because all of the references disclose a frequency synthesizer. See current Office action, page 5. As explained above, this simply is not a legitimate or legal reason to combine any two references, much less three references. It is not a reason to combine as recognized by the MPEP or any Federal Circuit law. See, for example, MPEP 2143.01, *In re Kotzab*, 55 USPQ2d 1313 (Fed. Cir. 2000), and *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002).

Talbot and Csapo do not disclose a frequency synthesizer, as alleged by the Examiner. Moreover, as Applicants have repeatedly stated, even if the prior art references all had a frequency synthesizer, it would not be relevant since Applicants' claims are not directed to a frequency synthesizer.

11. Applicants pointed out to the Examiner that the references did not teach multipoint multichannel distribution service based communication signals. The Examiner stated that since Csapo disclosed a base station communicating with a plurality of mobile stations utilizing a plurality of signal protocols and since MMDS is known in the art, it would have been obvious to modify Talbot, Bickley, and Csapo for providing a base station which is capable of communicating MMDS signals to fixed facilities for expanding enhanced services in order to fulfill customer needs. See current Office action, page 5. Again, the Examiner did not provide a suggestion to combine references or to modify the references.

As pointed out above, Bickley teaches a portable hand held device, and Talbot teaches a telescope system. Neither of these systems would use MMDS signals. Neither of these systems provides any other services. Moreover, the proposed modification would render the Bickley and Talbot systems unusable for their intended purposes.

Csapo teaches CDMA, TDMA, GSM, and analog. These are all protocols. TDMA is used in GSM systems, and CDMA is used in digital cellular systems. MMDS is not used along with any of these protocols. GSM and digital cellular are not line-of-sight technologies. So, there is no evidence that one or more hypothetical buildings would cause signal blockage. There is no reason to suggest that Csapo would have any reason to use MMDS over the protocols it described, especially since the Examiner found that MMDS was known in the art, and Csapo, therefore, could have listed MMDS. There is no evidence to suggest the

Csapo system would work with the MMDS protocol. The Examiner does not explain what is meant by enhanced services, what customer needs are required or fulfilled, and what is meant by a fixed facility. The Examiner's purported reason to combine the references is not valid.

12. On page 9 of the current Office action, the Examiner stated that since MMDS is just a high-frequency signal that provides a platform for providing services such as broadband data, voice, video, and high speed internet access, it is clear that the system of Schwartz would comprise and support such MMDS signals as well. The Examiner cited Schwartz at col. 2, lines 33-39, which states "[t]he central receiving means preferably comprises a receiver antenna for wireless communications. The central high-frequency signal is preferably within a frequency band used for cellular communications, cordless telephony, personal communication services, local radio-frequency communications, satellite television, interactive multi-media video, or high bit-rate local area networks."

Again, the Examiner did not provide a reason why this citation clearly teaches the claim limitations. The Examiner did not provide a reasoned analysis or any suggestion to modify Schwartz to arrive at the claimed limitations. The Examiner ignores the fact that MMDS is not disclosed anywhere in Schwartz. This reason to modify Schwartz is meaningless.

13. The Examiner states that the references must be considered as a whole and cites *In re Keller*, 208 USPQ 871 (CCPA 1981). This statement by the Examiner is correct. However, the Examiner then states that the teachings of Talbot and Bickley are directed to "a frequency synthesizer . . . not on frequency conversion nor tower, satellite, hand-held, optical cable as allegedly argued by Applicant." See current Office action, page 11.

As Applicants have repeated, Applicants' claims are not directed to a frequency synthesizer. Applicants' claims do include limitations for frequency conversion, a tower, and an optical cable. The Examiner has made Applicants' point for Applicants. Indeed, the claims are allowable by the Examiner's own words.

Further, Applicants' disagree with the Examiner's description of the references. The Examiner can hardly say Bickley does not teach a portable hand-held device when Bickley expressly states it is. The Examiner can hardly say Talbot does not teach a distance measuring device for a telescope when Talbot expressly states it is.

14. While the Examiner cites *In re Keller*, the Examiner ignores the teachings of *In re Keller* and other Federal Circuit law. As noted above, *In re Keller* explains that the test

for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 208 USPQ at 881. However, the Examiner cannot stop there and merely pull components from multiple references and say the combination is obvious. The Examiner cannot point to a single figure in a reference, blindly state that the figure is the "motivation" and not explain why it is the motivation to combine three references. The Examiner attempts to say that the motivation is found in the references in a blatant attempt to not explain the reasoning.

(The Examiner points to Figure 2 of Talbot and states that the motivation to combine three references is found in that one figure. See current Office action, page 11. The Examiner does not state how this one figure would lead a person of ordinary skill in the art to combine three references to meet the claimed invention. The Examiner gives other reasons to combine the references in other portions of the Office action and does not provide the reason or suggestion why a person of ordinary skill in the art would combine three references to meet the claimed invention. Thus, the Examiner is not even consistent on the rejections and why the different "motivations" would lead one of ordinary skill in the art to combine the three references to meet the claimed invention.)

As noted in *In re Kotzab*, "most if not all inventions are a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant." *In re Kotzab*, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citations omitted).

The PTO must provide particular findings related to the showing of the motivation to combine. *In re Kotzab*, 55 USPQ2d at 1317. Broad, conclusory statements standing alone are not "evidence." *In re Kotzab*, 55 USPQ2d at 1317.

"While the test for establishing [a] teaching, motivation, or suggestion is what the combination of [the references] would have suggested to those of ordinary skill in the art, the [statements in the references] cannot be viewed in the abstract. Rather, they must be considered in the context of the teaching of the entire reference. Further, a rejection cannot be predicated on the mere identification in [the reference] of individual components

of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.” *In re Kotzab*, 55 USPQ2d at 1317.

“The Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab’s invention to make the combination in the manner claimed.” *In re Kotzab*, 55 USPQ2d at 1318. Like *Kotzab*, the Examiner in the present case has alleged to have found prior art statements, and the Examiner argues that the statements in the abstract appear to suggest the claimed limitation. (Although, Applicants dispute that all of the claim limitations are found in the cited references.) But, there was no finding by the Examiner as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Applicants’ invention to make the combination in the manner claimed. The Examiner has continued to pull statements from the references and has not considered the cited statements in the context of the teaching of the entire reference. This action by the Examiner is exactly what is counseled against in *Kotzab*.

15. Further to Keller and *Kotzab*, Applicants pointed out that the Examiner was using hindsight to reconstruct Applicants’ invention. The Examiner responded by citing *In re McLaughlin*, 170 USPQ 209 (CCPA 1971) for the proposition that “it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But, so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the invention was made, and does not include knowledge gleaned only from the applicant’s disclosure such a reconstruction is proper.” See current Office action, page 11. The Examiner further states “[h]ere, the motivation for using the GPS timing signal to reduce frequency drift in the oscillator signal is clearly illustrated in Fig. 2 of the Talbot reference.” See current Office action, page 11. The Examiner does not make any further statements on the issue.

The Examiner does not state here that he is finding a motivation to combine all three references to meet the claimed limitations. This is clear error.

Further, the Examiner does not follow the teachings of the *McLaughlin* and recent Federal Circuit case law. As explained recently, “[i]n making the assessment of differences,

section 103 specifically requires consideration of the claimed invention 'as a whole.' Inventions typically are new combinations of existing principles or features. The 'as a whole' instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention. Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole. This court has provided further assurance of an 'as a whole' assessment of the invention under §103 by requiring a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner. In other words, the examiner or court must show some suggestion or motivation, before the invention itself, to make the new combination." *Ruiz v. A.B. Chance Co.*, 69 USPQ2d 1686, 1690 (Fed. Cir. 2004).

The Examiner has done exactly what is cautioned against in *Ruiz*. The Examiner has broken the invention into component parts and then attempted to find prior art references that teach the component parts. The Examiner provides a single citation to demonstrate one of the component parts and for the "motivation" to combine all three references. But, the Examiner never really provides a motivation to combine as allowed by the MPEP or any Federal Circuit case, as explained above. Applicants have shown that all of the component parts are NOT shown in the prior art. Applicants have further shown that, even if one thinks all of the component parts are shown in the prior art, the Examiner still has not provided a motivation to combine all three references to reach the claimed limitations.

**The Examiner ignores the teachings of Schwartz.**

16. Schwartz teaches reference signals. Schwartz does not teach GPS signals or other stable timing signals. Schwartz does not teach a stable timing source. Applicants discussed this issue in the prior response.

The Examiner relies on Schwartz, column 6, lines 37-40. However, the Examiner ignores the teaching of the entire section of column 6, lines 27-40, which states the following.

A high-stability signal generated using oscillator 92 is delivered to an input of phase-comparator 84 (also the input of central reference means 82). Another input of phase comparator 84 receives a signal from divider 86, generated by frequency-dividing the central reference signal by a tunable integer N. The output of comparator 84 is connected through filter 88 to a control input of oscillator 80. Comparator 84 produces a central adjustment signal representative of the phase difference between the two signals received at its inputs. The central adjustment signal drives oscillator 80. The central reference signal generated by oscillator 80 is thus frequency-stabilized using the high-stability signal generated by oscillator 92.

The Examiner also ignores the teaching of the rest of the reference. Schwartz states that the reference signal is used to control the "frequency of the remote reference signal, preferably such that it is equal to the frequency of the central reference signal." Column 5, lines 63-65. Schwartz further discloses that the "[c]entral reference means 82 comprises a central reference oscillator (local oscillator) 80. Oscillator 80 is preferably a voltage-controlled high-frequency oscillator which by itself would emit a signal of low frequency stability." Column 6, lines 4-6. Further, "Oscillator 80 is stabilized by a central frequency stabilization means comprising a phase comparator 84, a tunable frequency divider 86 characterized by a tunable integer N, and a low-pass filter 88." Column 6, lines 9-12. Schwartz is using a signal of another frequency as a reference only, not as a stable timing source. The frequency of the reference signal may be changed by changing the value N of the tunable frequency divider 86. That signal is then used to generate a global tuning signal, which is the ultimate reference. Schwartz even states "the global tuning signal is of a frequency suitable for transmission through transmission means 26, and such that the frequency bands of the global tuning signal and the intermediate signal do not overlap." Column 6, lines 52-56. The oscillator 80 of Schwartz is not stabilized by a stable timing signal. Clearly, this disclosure does not read on Applicants' claims.

17. The Examiner also ignores Applicants request to read the claims in light of the specification, and to interpret limitations recited in the claims. On page 4, lines 13-15 of Applicants' application, Applicants state "[t]hese wireless technologies also sometimes use block converters at the base of towers to lower communication signals in frequency. These block converters have a local oscillator whose input frequency tends to move around. Thus, the output of the block converter is not stable and subject to drift."

Applicants explained that the local oscillator is not a stable timing source and does not emit a stable timing signal. Therefore, if the Examiner correctly reads the claims in

light of the specification, the Examiner would not equate a local oscillator as a stable timing source. Yet, as shown above, that is exactly what the Examiner did. The Examiner claims that "the oscillator 92 which generates a high-stability signals for oscillator 82 to generate a stabilized oscillator signal would read on the 'timing source' and the 'high-stability signal' would read on the 'stable timing signal' as claimed." See current Office action, page 8. The "oscillator 92" is not a stable timing source as claimed, and the "high-stability signal" is not a stable timing signal as claimed. Applicants remind the Examiner that the citations from the prior art references must be considered in the context of the teaching of the entire reference, and a rejection cannot be predicated on the mere identification in the reference of individual components of claimed limitations. *In re Kotzab*, 55 USPQ2d at 1317.

The Examiner has not identified teachings in the prior art for all limitations of all claims

18. In Applicants' prior response, Applicants noted that the Examiner had not specifically identified all limitations of all claims in the rejections.

For example, the Examiner rejected claim 11 for the same reason as set forth in claim 1, which was rejected over Schwartz. The Examiner further found that "in addition, by mounting the central subsystem 22 of Schwartz on the tower of the building for reducing power loss in the cable with low frequency signals, and, Schwartz as modified would disclose the stable timing signal is generated from the upper portion of the tower as claimed."

The Examiner ignores the additional claim limitations in claim 11 for the MMDS service based communication signal, the fiber optic cable, the timing source, the stabilized local oscillator, the block converter, the optical converting system, and the optical receiving system, all of which are not found in claim 1. General statements by the Examiner do not take the place of required evidence and reasoned statements. The Examiner did not provide a reason to modify Schwarz to arrive at the claimed limitations.

19. Moreover, Applicants note that the Background of Applicants' application states "[t]hese transmission lines typically are thick, heavy, and allow much of the communication signal to be lost due to noise and resistive loss." Application, page 1, line 21- page 2, line 2. Applicants note that the Detailed Description of Applicants' application states "The LNBs 218 and 220 are placed after the LNAs 214 and 216 so that the communication signals can be converted to a lower frequency before they are transmitted. This lowers loss that may be experienced during transmission over non-fiber optic components to the base of the

tower." Application, page 12, lines 6-9. Even though the Examiner has not identified all of the limitations of claim 11 in the prior art, the Examiner continues to try to use Applicants' teachings against them in a hindsight analysis.

20. Similarly, the Examiner did not identify all limitations of claims in the prior art in the rejection under Schwartz. For example, the following claim limitations were not addressed: claim 14 (a timing source configured to generate a stable timing signal, a stabilized local oscillator, a block converter, a fiber optic transmitter, and a fiber optic receiver); claim 35 (a timing source configured to generate a stable timing signal, a stabilized local oscillator, and a block converter); claim 45 (generating a stable timing signal, using the stable timing signal as an input to a local oscillator to generate a stabilized oscillator signal, using the stabilized oscillator signal to convert the receiving frequency of the communication signal to a stable lower frequency, transmitting the optical signal over fiber optic cable, and receiving the optical signal over the fiber optic cable); claim 57 (generating a stable timing signal, receiving the stable timing signal at a local oscillator and using the stable timing signal as an input to generate a stabilized oscillator signal, and using the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency); claim 64 (generating a stable timing signal, receiving the stable timing signal at a local oscillator and using the stable timing signal as an input to generate a stabilized oscillator signal, using the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency, transmitting the optical signal over fiber optic cable, and receiving the optical signal over the fiber optic cable); and claim 67 (generating a stable timing signal, converting the receiving frequency of a communication signal to an intermediate frequency using the stable timing signal, transmitting the optical signal over fiber optic cable, and receiving the optical signal over the fiber optic cable) (all with the entire limitation, not just the base limitation provided herein).

21. Similarly, the Examiner did not identify all limitations of claims in the prior art in the rejection under Csapo in view of Talbot and Bickley. The Examiner ignores the additional claim limitations in claim 11 for receiving an MMDS service based communication signal at a tower, fiber optic cable extending from approximately the upper portion of the tower to at least approximately the lower portion of the tower, a timing source located at approximately the upper portion of the tower and configured to receive a stable timing source signal and to transmit a stable timing source based stable timing signal, a stabilized local oscillator located at

approximately the upper portion of the tower configured to receive the stable timing source based stable timing signal and to use the stable timing source based stable timing signal as an input to generate a stabilized oscillator signal, a block converter configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized local oscillator signal, an optical converting system located at approximately the upper portion of the tower and configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over the fiber optic cable from approximately the upper portion of the tower, and an optical receiving system configured to receive the optical signal over the fiber optic cable.

22. Similarly, the Examiner did not identify all limitations of claims in the prior art in the rejection under Csapo in view of Talbot and Bickley. For example, the following claim limitations were not specifically addressed: claim 14 (a block converter, a fiber optic transmitter, and a fiber optic receiver); claim 35 (a block converter); claim 45 (using the stable timing signal as an input to a local oscillator to generate a stabilized oscillator signal, using the stabilized oscillator signal to convert the receiving frequency of the communication signal to a stable lower frequency, and receiving the optical signal over the fiber optic cable); claim 57 (receiving the stable timing signal at a local oscillator and using the stable timing signal as an input to generate a stabilized oscillator signal, and using the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency); claim 64 (receiving the stable timing signal at a local oscillator and using the stable timing signal as an input to generate a stabilized oscillator signal, using the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency, and receiving the optical signal over the fiber optic cable); and claim 67 (converting the receiving frequency of a communication signal to an intermediate frequency using the stable timing signal and receiving the optical signal over the fiber optic cable) (all with the entire limitation, not just the base limitation provided herein).

**The Examiner has not established inherency**

23. "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." MPEP 2112. "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established

by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." MPEP 2112. "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."

The Examiner claims that the converting system of claim of Applicants' claims is inherent in Schwartz. The Examiner stated that it is clear that when a fiber-optic cable is used, an optical conversion would inherently be utilized before transmitting the stable lower frequency signal to the fiber optic cable.

However, the Examiner did not compare the claim limitations for the converting system to the inherency rejection. The examiner did not find that the claimed limitation was inherent in Schwarz.

It is not inherent in Schwartz that any specific type of signal is converted at any point in time with any particular equipment. Schwartz states that individual channels are centrally and tunably selected for emission in a distributed wireless communications system. A high-frequency signal received at a central antenna is down-converted such that a selected channel corresponds to a predetermined frequency range. Non-selected channels are filtered out. The selected channel is transmitted to remote locations over commonly available transmission lines, up-converted, and re-emitted. The transmitted channel is chosen by tuning the frequency of the local oscillator used for down-conversion. See Schwartz Abstract.

It is not inherent in Schwartz that a converting system is configured to convert the communication signal from the frequency to a stable lower frequency using the stable timing signal and to convert the lower frequency signal to an optical signal. The Examiner has not identified any portion of Schwartz which inherently teaches converting a lower frequency signal to an optical signal. The Examiner did not identify the claimed subject matter in the inherency rejection, and the Examiner did not provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

#### Hindsight

24. The Examiner claims that he is not using hindsight because the teaching of using a GPS timing signal to stabilize a local oscillator signal that has less drift is taught by

Walsh at column 3, lines 30-47 and Talbot at column 5, line 64-column 6, line 9 and Figure 2. Walsh was not used to reject any independent claims. Applicants have not made any remarks as to Walsh. Walsh is not relevant to a hindsight based rejection if the rejection is not based on that reference. Regarding Talbot, as explained above, the claim limitations are not taught in these references.

On page 11 of the current Office action, The Examiner further states that he is not using improper hindsight because Figure 2 of Talbot discloses "the motivation." Figure 2 of Talbot shows a graph of short-term variations, long-term drift, and GPS-corrected long-term drift. Talbot discloses a measuring device for a telescope. Talbot does not provide any "motivation" or suggestion to combine its teachings with two other unrelated references. Talbot does not teach all of Applicants' claim limitations, and a graph showing drift rates does not provide a motivation to combine all three references.

25. For all of the reasons set forth above, Applicants submit that all claims are patentable and request withdrawal of all rejections.

#### Further Comments to Rejections

26. The Examiner rejected claims 1, 8, 11, 14, 26-27, 30, 35, 41-42, 45, 52, 55, 57, 64, and 67 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 5,930,682, issued to Schwartz ("Schwartz").

Regarding claim 1, in the Summary of the Invention, Schwartz discloses that a "low-bandwidth transmission line can be a line that is pre-installed in a building, such as 10 base T cable, telephone wire, fiber-optic cable, unshielded cable or power cable." Column 4, lines 19-22. However, Schwartz does not disclose or teach an optical receiving system, and the Examiner does not allege that Schwartz does teach or disclose an optical receiving system. Further, Schwartz does not disclose or teach a converting system configured to convert the lower frequency signal to an optical signal. The mere mention of the existence of a fiber optic cable somewhere in the Schwartz system does not mean Schwartz teaches the converting system required in Applicants' claims, and the Examiner cannot make that jump. Further, such a conversion system is not inherent in the system disclosed in Schwartz, and there is no disclosure in Schwartz from which the Examiner could make an inherency argument.

Moreover, although alleged by the Examiner, Schwartz does not teach a converting system configured to convert the communication signal from the frequency to a stable

lower frequency using a stable timing signal as required in Applicants claims. Schwartz does disclose a reference signal generated by a central reference means 82. But, Schwartz does not disclose that the reference signal is used for any timing aspects to produce a stable timing signal used to convert a frequency to a stable lower frequency.

Schwartz states that the reference signal is used to control the "frequency of the remote reference signal, preferably such that it is equal to the frequency of the central reference signal." Column 5, lines 63-65. Schwartz further discloses that the "[c]entral reference means 82 comprises a central reference oscillator (local oscillator) 80. Oscillator 80 is preferably a voltage-controlled high-frequency oscillator which by itself would emit a signal of low frequency stability." Column 6, lines 4-6. Further, "Oscillator 80 is stabilized by a central frequency stabilization means comprising a phase comparator 84, a tunable frequency divider 86 characterized by a tunable integer N, and a low-pass filter 88." Column 6, lines 9-12. Schwartz is using a signal of another frequency as a reference only, not as a timing source. The frequency of the reference signal may be changed by changing the value N of the tunable frequency divider 86. That signal is then used to generate a global tuning signal, which is the ultimate reference. Schwartz even states "the global tuning signal is of a frequency suitable for transmission through transmission means 26, and such that the frequency bands of the global tuning signal and the intermediate signal do not overlap." Column 6, lines 52-56. The oscillator 80 of Schwartz is not stabilized by a stable timing signal.

Thus, Schwartz does not disclose the stable timing signal of Applicants' claims. Schwartz does not disclose a stabilizing system configured to generate a stable timing signal.

Here, where the component in the cited reference (regardless of its name) is not the same and does not have the same function as the claimed limitation, it is not even referred to the same by Schwartz and the present Applicants, and Applicant has shown why the cited component and the claimed limitation are not the same, the Examiner must provide a reasoned analysis why the Examiner construes them to be the same. *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). This is true even though the Examiner may give the claim term its broadest reasonable meaning. The Examiner may not just ignore *In re Lee*.

Additionally, the Examiner does not provide a suggestion to modify the disclosure of Schwartz to arrive at the claimed limitations. The Examiner's continued use of the theory (here or in other claims) that something would be placed on a tower to reduce blockage of

signals caused by tall buildings is not supported by any evidence, and Applicants traverse the same.

Regarding claim 8, claim 8 is believed patentable for the same reasons stated above. Additionally, Schwartz does not teach, disclose, or suggest a timing source configured to generate the stable timing signal. Further, Schwartz does not teach, disclose, or suggest a stabilized local oscillator configured to receive the stable timing signal and to use the stable timing signal as an input to generate a stabilized oscillator signal.

Regarding independent claim 11, Schwartz does not teach, disclose, or suggest a fiber optic cable extending from approximately the upper portion of the tower to at least approximately the lower portion of the tower, and the Examiner does not allege that it does. Schwartz does not teach, disclose, or suggest a timing source located at approximately the upper portion of the tower and configured to receive a stable timing source signal and to transmit a stable timing source based stable timing signal. Schwartz does not teach, disclose, or suggest a stabilized local oscillator located at approximately the upper portion of the tower configured to receive the table timing source based stable timing signal and to use the table timing source based stable timing signal as an input to generate a stabilized oscillator signal. Schwartz does not teach, disclose, or suggest a block converter configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized local oscillator signal, and the Examiner does not allege that it does. Schwartz does not teach, disclose, or suggest an optical converting system located at approximately the upper portion of the tower and configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over the fiber optic cable from approximately the upper portion of the tower, and the Examiner does not allege that it does. Schwartz does not teach, disclose, or suggest an optical receiving system configured to receive the optical signal over the fiber optic cable, and the Examiner does not allege that it does. Schwartz does not teach, disclose, or suggest an MMDS system, and the Examiner does not allege that it does.

Further, regarding the Examiner's stated reason for modifying Schwartz to meet the limitations of claim 11, it should be noted that Applicants stated their concerns with prior systems in the application. Those concerns included that much of the communication signal is lost due to noise and resistive loss and that thick cables were required used to carry a signal of

adequate frequency. Thus, the Applicants' system reduces losses in the transmission lines and has lighter cables that reduces the load on the tower.

Thus, again, the Examiner is using impermissible hindsight. Again, the Examiner is using the teachings in Applicants' disclosure as a basis for the rejection. Again, Applicants remind the examiner that this is not permissible under *In re Lee*, at 1434. Further, in responding to Applicants' request for reasoned findings, Applicants request that the Examiner not ONLY re-write MPEP Form Paragraphs and then re-state the rejection, but that the Examiner explain the reasoning as required by *In re Lee*.

Regarding independent claim 14, Schwartz does not teach, disclose, or suggest the claimed timing source configured to generate a stable timing signal, a stabilized local oscillator configured to receive the stable timing signal and to use the stable timing signal as an input to generate a stabilized oscillator signal, a block converter configured to use the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency, a fiber optic transmitter configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over fiber optic cable, or a fiber optic receiver configured to receive the optical signal over the fiber optic cable. The Examiner does not even address the claimed limitations for the timing source, the stabilized local oscillator, the block converter, the fiber optic transmitter, and the fiber optic receiver. The issues for the antenna limitation are otherwise addressed herein.

Regarding independent claim 35, it is believed patentable for the same reason identified above for the claimed limitations for the timing source, the stabilized local oscillator, the block converter, and the antenna. Again, it is noted that the limitations for the timing source, the stabilized local oscillator, and the block converter were not addressed by the Examiner.

Regarding claim 41, the Examiner again stated that Schwartz discloses an MMDS signal at column 2, lines 33-39. See current Office action, page 3. The following is a quote from Schwartz at column 2, lines 33-39: "The central receiving means preferably comprises a receiver antenna for wireless communications. The central high-frequency signal is preferably within a frequency band used for cellular communications, cordless telephony, personal communication services, local radio-frequency communications, satellite television, interactive multi-media video, or high bit-rate local area networks." Schwartz does not disclose, teach, or suggest an MMDS signal. Schwartz further does not disclose any fiber optic transmitter or receiver.

Regarding independent claims 45, 57, 64, and 67, these claims were rejected by the Examiner for the same reasons identified above. These claims are patentable for the same reasons specified above.

For the reasons discussed above, Schwartz does not disclose, teach, or suggest the limitations of Applicants' claims 1, 8, 11, 14, 35, 41, 45, 57, 64, or 67. Therefore, Applicants submit that these claims are allowable. Withdrawal of the rejections of these claims respectfully is requested.

With regard to the claims depending from claims 1, 8, 11, 14, 35, 41, 45, 57, 64, and 67, they contain all of the limitations of their respective base claims. Therefore, they also are believed to be allowable. Withdrawal of the rejection of the depending claims respectfully is requested.

The Examiner rejected claims 6, 43, 50-51, 61, 65 and 68 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 5,930,682, issued to Schwartz ("Schwartz") in view of U.S. Patent No. 6,308,077, issued to Walsh ("Walsh").

The Examiner stated that he rejected the claims for the same reasons specified above. They therefore are patentable for the same reasons specified above.

The Examiner further stated that "it is noted that the use of a GPS receiver for generating a stable timing signal is known in the art as disclosed by Walsh (see Figs 1-2 and col. 3, lines 45-48). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teachings of Walsh to Schwartz for providing the oscillator stable signal derived from the GPS receiver as claimed, for reducing long-term frequency drift in the oscillator signal."

Further, Figure 1 of Walsh does show a GPS satellite 120, base stations, and towers. Figure 2 shows a processor, a phase detector, a digital to analog converter, a mux, an antenna, crystal oscillator, and a loop detector. Neither Figure shows any of the claimed limitations. For example, in claim 68, the references do not disclose, teach, or suggest receiving the communication signal at a receiving frequency at approximately an upper portion of a communication tower. Neither reference discloses, teaches, or suggests receiving a global positioning system signal at approximately the upper portion of the communication tower and using the global positioning system signal to generate a global positioning system based stable timing signal. Neither reference discloses, teaches, or suggests receiving the global positioning

system based stable timing signal at a stabilized local oscillator located at approximately the upper portion of the tower and using the global positioning system based stable timing signal as an input to generate a stabilized local oscillator signal. Neither reference discloses, teaches, or suggests converting the receiving frequency of communication signal to a stable lower frequency using the stabilized local oscillator signal.

Column 3, lines 45-48 states “ $\mu$ P 206 implements a digital filter to attenuate phase variations received by GPS receiver 100-101 to produce a stable clock frequency output from VCXO 210.” However, this does not meet the claimed limitations in, for example, claim 68. The claim limitations in claim 68, for example, require “using the global positioning system signal to generate a global positioning system based timing signal” and “receiving the global positioning system based stable timing signal at a stabilized local oscillator located at approximately the upper portion of the tower and using the global positioning system based stable timing signal as an input to generate a stabilized local oscillator signal” and “converting the receiving frequency of communication signal to a stable lower frequency using the stabilized local oscillator signal.” These limitations are not found in Walsh, and the Examiner does not allege that they are.

The citations produced by the Examiner state that the phase variations received by the GPS receiver are filtered to produce a stable clock frequency output from the oscillator. Recall that the Walsh system is used to synchronize signals between base stations. (“However, these signals 110-113 by themselves are not usable, as the propagation delays (TX1, TX2, TY1, TY2) from LF transmitters 121-122 to base-stations 115-116 are unknown. Consequently, GPS signal 106-108 provide greater synchronization accuracy than LF signals 110-113. In accordance with the invention, base-stations 115-116 receive signals from a selected LF transmitter 121-122, determine the clocking rate of the GPS signals 106-108 utilized for synchronization, characterize the second clocking rate of signals 110-113 utilizing the first clocking rate, and employs signals 110-113 having been characterized for synchronization when GPS signals 106-108 are absent.” Column 1, lines 51-64.) The system of Walsh is not even used to convert ANY signals. The Examiner has mis-characterized the disclosure and teachings of Walsh.

Moreover, the Examiner cannot state that a reference discloses the use of a GPS signal in a communication system and therefore one skilled in the art can combine the references

to get the claimed invention. Each and every limitation must be disclosed or taught in the cited references. A motivation or suggestion to combine must be shown.

For these additional reasons, Applicants believe claims 6, 43, 50-51, 61, 65 and 68 are patentable over the cited references. Applicants respectfully request withdrawal of the rejections.

Further, the Examiner again uses impermissible hindsight in combining these references. The Examiner finds that the reason to combine the references is to reduce long-term frequency drift in the oscillator.

Applicants stated in their application the following. "These block converters have a local oscillator whose input frequency tends to move around. Thus, the output of the block converter is not stable and subject to drift." Page 4, lines 13-15. "In addition, the wireless communication systems of the present invention use a stable timing signal, such as a global positioning system (GPS) timing signal or another stable timing signal, to stabilize a local oscillator in a low noise block converter (LNB). The stable timing signal enables the LNB to output a more stable communication signal that has less drift and, therefore, has increased quality." Page 6, lines 8-12. The Examiner is blatantly pulling the teachings of Applicants' application and using them as reasons to combine cited references in violation of the MPEP and *In re Lee*. For this additional reason, Applicants request withdrawal of the rejection of these claims.

For these additional reasons, Applicants believe claims 6, 43, 50-51, 61, 65 and 68 are patentable over the cited references. Applicants respectfully request withdrawal of the rejections for these claims.

The Examiner rejected claims 1-6, 8-62, 64-68 under 35 U.S.C. § 103 as being unpatentable by U.S. Patent No. 6,411,825, issued to Csapo et al. ("Csapo") in view of U.S. Patent No. 6,163,294, issued to Talbot ("Talbot"), and U.S. Patent No. 5,982,322, issued to Bickley et al. ("Bickley").

Applicants incorporate by reference all arguments made in the prior Responses with regard to Csapo, Talbot, and Bickley.

The Examiner states that Csapo teaches a GPS receiver and a frequency synthesizer for down converting the receiving signal to a lower frequency at column 4, lines 43-53. At column 4, lines 43-53 Csapo discloses "By locating the transceiver module in the RU,

only low frequency signals need be passed from the transceiver module and the MU. On the receive side, the transceiver module converts a high frequency signal to a low frequency signal, and on the transmit side, the transceiver module converts a low frequency signal from the MU to a high frequency signal for transmission. Thus, only low frequency signals are passed between the RU and MU, minimizing power loss in the cables connecting the two units. This results in the ability to use smaller diameter, less costly cables."

Csapo does not even mention anything about GPS signals in this citation. The citation teaches converting frequencies. Csapo does not state how they are converted. Csapo does not disclose or teach anything about a timing signal, that a GPS system can be used as a timing source, or anything else relevant about a conversion system using a GPS signal. Csapo does not even mention a stabilizing system.

Csapo discloses the following with regard to Figure 17: "The PMU may have a global positioning system (GPS) antenna connected to it." Column 12, lines 33-34. That is the extent of any and all discussions about GPS. Csapo does not even state why someone might use the GPS signals.

The Examiner further states that Csapo discloses a frequency synthesizer. Again, a frequency synthesizer is not relevant to the claimed invention. Applicants do not claim a frequency synthesizer and do not even discuss a frequency synthesizer in Applicants application. It is not relevant to the claimed invention, to any obviousness analysis, or to combining any references.

Moreover, Csapo merely states that the "transceiver module 155 may include synthesizer circuitry, transmitter circuitry, and two receiver circuits (it is common to refer to a system's transmitter and receiver circuitry collectively as a "transceiver")." Column 7, lines 41-44. There is no other reference to synthesizer circuitry or for what it is used. The Examiner has mis-characterized Csapo.

Talbot discloses a time-tagging electronic distance measurement instrument. This reference is not in the same art as the present Application. One skilled in the art would not likely look to a time-tagging electronic distance measurement instrument for knowledge about down-converting high frequency signals. Regardless, the Examiner cites Figures 2 and 3 of Talbot and column 5, line 64-column 6, line 9 to make up the deficiencies of Csapo.

Talbot is directed to a satellite positioning system and an electro-optical total station system with a phase measurement device. The Talbot system mounts electronic distance measurement devices on theodolites which have telescopes that can precisely sight a horizontal and vertical angle to a target. Those combinations are electro-optical hybrids called "total stations." Column 3, line 66-column 4, line 1. An electronic distance meter (EDM) has an EDM transmitter for launching an outbound signal to a distant target and an EDM receiver for receiving a reflected signal from the distant target. Column 4, lines 19-23. The device measures the difference in the number of cycles of a reference frequency between the out-bound signal and the reflected signal. Column 4, lines 24-29. Post processing is then used to relate the corresponding measurements and time standards such that a distance to target measurement can ultimately be computed. Column 4, lines 35-38. A GPS master reference oscillator is used to correct signals from a navigation computer that maintain satellite tracking. Column 4, lines 51-54.

At column 5, line 64-column 6, line 9, Talbot discloses a total station 72 with an input from a reference oscillator that is stabilized by a timing signal derived from a GPS receiver. Talbot states, for example, GPS receivers output a utility one-pulse-per-second (1PPS) that can be used to make minor corrections in the operating frequency of oscillator 74. Such a reference oscillator may be a voltage-controlled oscillator (VCO).

However, this citation does not (and none of Talbot does) disclose, teach, or suggest the claimed limitations. In claim 1, for example, Talbot does not teach a converting system configured to convert the communication signal from the frequency to a stable lower frequency using the stable timing signal, to convert the lower frequency signal to an optical signal, and to transmit the optical signal. Nor does Csapo disclose, teach, or suggest this.

In claim 8, for example, Talbot does not disclose, teach, or suggest a converting system configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized oscillator signal. Nor does Csapo disclose, teach, or suggest this limitation.

In claim 11, for example, Talbot does not disclose, teach, or suggest a block converter configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized local oscillator signal or an optical converting system located at approximately the upper portion of the tower and configured to convert the lower frequency

communication signal to an optical signal and to transmit the optical signal over the fiber optic cable from approximately the upper portion of the tower. Talbot does not teach an MMDS system. Nor does Csapo disclose, teach, or suggest any of these limitations. Nor does either reference disclose the limitations as to location of the claimed components.

In claim 14, for example, Talbot does not disclose, teach, or suggest a block converter configured to use the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency. Talbot does not disclose, teach, or suggest a fiber optic transmitter configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over fiber optic cable or a fiber optic receiver configured to receive the optical signal over the fiber optic cable. Nor does Csapo disclose, teach, or suggest any of these limitations.

In claim 35, for example, Talbot does not disclose, teach, or suggest a block converter configured to use the stabilized oscillator signal to convert the frequency of the communication signal to a stable intermediate frequency. Nor does Csapo disclose, teach, or suggest this limitation.

Regarding claim 41, neither Csapo nor Talbot disclose the claim limitations. Moreover, neither Csapo nor Talbot disclose, teach, or suggest an MMDS system as required by claim 41. Bickley also does not disclose an MMDS system. The Examiner has not provided any reason to combine any of these references or to modify them to meet the limitations of claim 41. (As noted below, just because MMDS systems existed when Applicants filed this application, the Examiner cannot use that as a reason to modify any references, without more, such as a suggestion or motivation and a reasoned statement as to the modification.)

Talbot does not meet the deficiencies of Csapo. Neither Talbot nor Csapo alone or in combination disclose, teach, or suggest the claimed limitations.

For the reasons stated above, claims 1, 8, 11, 14, 35, and 41 are believed patentable. Withdrawal of the rejection of claims 1, 8, 11, 14, 35, and 41 respectfully is requested.

Claims 45, 57, 67, and 68 are believed patentable for the same reasons identified above. Withdrawal of the rejection of claims 45, 57, 67, and 68 respectfully is requested.

The claims depending from claims 1, 8, 11, 14, 35, and 41 and 45, 57, 67, and 68 contain all of the limitations of the base claim and any intervening claims. For this reason, the

claims depending from claims 1, 8, 11, 14, 35, and 41 and 45, 57, 67, and 68 are believed patentable. Withdrawal of these claims respectfully is requested.

The Examiner has stated that he is combining Csapo with Talbot and Bickley. The Examiner cited Bickley col. 8, lines 1-19 and Talbot, Figs. 2-3 and col. 5, line 64-col. 6, line 9. Applicants' response to this issue was addressed above. Also, since all of the claim limitations are not found in either Csapo or Talbot, alone or in combination, the Examiner's stated motivation to combine is moot. However, for completeness, Applicants will respond to this portion of the Action.

The Examiner cited Bickley at column 8, lines 1-19 to state that it is well known in the art that a frequency synthesizer is a voltage controller oscillator (VCO) for generating a variety of pre-determined frequencies derived from a stable master oscillator. Bickley at column 8, lines 1-19 states the following:

Frequency synthesizer 100 is desirably a voltage controlled oscillator with internal phase lock loops or other arrangements well known in the art for generating a variety of predetermined frequencies derived from a stable master oscillator which is in turn calibrated by accurate timing or frequency signals from clock 41 and GPS receiver 34 via data processor 38. Various frequencies produced by frequency synthesizer 100 are used in transmit and receive modes. Not only does frequency synthesizer 100 provide the frequencies needed to operate on the desired transmit and receive channels, but also provides any other frequencies used internally by the transceiver for modulating or demodulating the various signals being processed. Since the output of frequency synthesizer 100 is controlled by data processor 38, the production of such frequencies for different purposes and at different times during receive and/or transmit functions is readily accomplished. Computer controlled oscillators are well known in the art. The receiver/transmitter function including encryption of the position and message information, is controlled by data processor 38.

However, Bickley is not relevant to the present claims. The present claims have not claimed a frequency synthesizer. What is or is not known in the art of frequency synthesizers has no bearing on the present claims. Moreover, it does not have any bearing on Talbot or Csapo.

Additionally, the cited reference does not state what the Examiner stated. The cited reference states that "Frequency synthesizer 100 is desirably a voltage controlled oscillator with internal phase lock loops or other arrangements well known in the art for generating a variety of predetermined frequencies derived from a stable master oscillator." Thus, the citation states that internal phase lock loops or other arrangements are well known in the art. It does

NOT state that it is well known in the art that a frequency synthesizer is a VCO for generating a variety of predetermined frequencies derived from a stable master oscillator, as claimed by the Examiner. Thus, even the Examiner's stated reason for combining the references is wrong. Although, Applicants maintain the attempt to combine the references was improper as stated above.

Further, Bickley does not disclose, teach, or suggest the claimed limitations that are missing from Csapo and Talbot. In claim 1, for example, Bickley does not teach a converting system configured to convert the communication signal from the frequency to a stable lower frequency using the stable timing signal, to convert the lower frequency signal to an optical signal, and to transmit the optical signal. Nor does Csapo disclose, teach, or suggest this.

In claim 8, for example, Bickley does not disclose, teach, or suggest a converting system configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized oscillator signal. Nor does Csapo and/or Talbot disclose, teach, or suggest this limitation.

In claim 11, for example, Bickley does not disclose, teach, or suggest a block converter configured to convert the communication signal from the frequency to a stable lower frequency using the stabilized local oscillator signal or an optical converting system located at approximately the upper portion of the tower and configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over the fiber optic cable from approximately the upper portion of the tower. Nor does Csapo and/or Talbot disclose, teach, or suggest any of these limitations. Nor does any reference disclose the limitations as to location of the claimed components.

In claim 14, for example, Bickley does not disclose, teach, or suggest a block converter configured to use the stabilized oscillator signal to convert the frequency of the communication signal to a stable lower frequency. Bickley does not disclose, teach, or suggest a fiber optic transmitter configured to convert the lower frequency communication signal to an optical signal and to transmit the optical signal over fiber optic cable or a fiber optic receiver configured to receive the optical signal over the fiber optic cable. Nor does Csapo and/or Talbot disclose, teach, or suggest any of these limitations.

In claim 35, for example, Bickley does not disclose, teach, or suggest a block converter configured to use the stabilized oscillator signal to convert the frequency of the

communication signal to a stable intermediate frequency. Nor does Csapo and/or Talbot disclose, teach, or suggest this limitation.

None of Csapo, Talbot, or Bickley disclose the limitations of claim 41. Moreover, none of Csapo, Talbot, or Bickley disclose, teach, or suggest an MMDS system as required by claim 41. The Examiner has not provided any reason to combine any of these references or to modify them. Just because MMDS existed when Applicants filed this application, the Examiner cannot use that as a reason to modify any references, without more, such as a suggestion to combine and reasoned findings.

#### **Examiner's Response to Arguments**

Applicants requested that the Examiner respond to all of its Arguments in the prior action. Applicants thank the Examiner for providing the responses.

#### **Examiner's Other Arguments**

As demonstrated above there was no teaching, suggestion, or motivation to combine in the references themselves. The Examiner incorrectly combined Csapo with Talbot and Bickley. This does not comply with the letter of the case citation provided by *In re Fine*. (Applicants have also shown that even all three references combined do not disclose, teach, or suggest all of the claim limitations.)

Further, the Examiner did not follow an important portion of the *In re Fine* case. The Court in that case found that to establish a *prima facie* case of obviousness, the PTO must show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine* at 1598. The Examiner has not complied with these requirements.

*In re Fine* was cited recently by both *In re Thrift*, 63 USPQ2d 2002 (Fed. Cir. 2002) and *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002). *In re Thrift* further explained *In re Fine* and stated that "when examining claims for patentability, claims are interpreted as broadly as is reasonable and consistent with the specification." *In re Thrift* at 2206.

*In re Lee* also further explained *In re Fine*. Applicants referenced the appropriate portions of *In re Lee* above and ask that the Examiner comply with them. Also in that case, the Court held that the PTO's reliance on "common knowledge and common sense" did not fulfill the agency's obligation to cite references to support its conclusions. *Id.* at 1344, 61 USPQ2d at 1434. Instead, the PTO must document its reasoning on the record to allow accountability. *In re*

*Lee* at 1435. Here, the Examiner has made statements that one skilled in the art would modify a reference without providing citations to references and reasoned findings.

*In re Lee* also states "our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."

*In re Lee* at 1434. In the Office Action, the Examiner included the MPEP Form Paragraph with the citation to the *McLaughlin* case but then restated what the Examiner already stated. Namely, the Examiner stated that the motivation to combine is found in Talbot because Talbot teaches using a GPS timing signal to reduce frequency drift. However, the Examiner does not state how this Talbot citation is a motivation to combine with Csapo or Bailey. The arguments are circular.

The Examiner again stated that Applicants were attempting to import limitations into the claims from the specification. That is not the case. Applicants merely refuted the Examiner's attempts to combine the references and asked the Examiner to comply with *In re Thrift*. The Examiner has attempted to force teachings into the cited references where none exists.

The Examiner stated that it would be obvious to modify the cited reference because it would be obvious for one skilled in the art to do so. The Examiner stated that "in the knowledge generally available to one of ordinary skill in the art of satellite, it would have been obvious at the time the invention was made to modify Csapo, Talbot, and Bickley to either locate the PMU or placing the GPS receiver in a particular position (i.e. the top) of the tower that would reduce blockage of GPS satellite signals caused by high or tall buildings." Applicants refuted that statement by explaining that the Examiner was not providing a reasoned statement, why the Examiner's purported reason for modifying the system was not correct, and how the Examiner was using hindsight. Applicants did not import limitations into the claims. Applicants refuted the Examiner's "motivation" to modify the references. The Examiner did not provide proof or reasoned findings. The Examiner did not comply with *In re Lee* or *In re Thrift*.

Additionally, Applicants note that the Examiner finds the claims "just merely recite the location of the GPS or stable timing signals with respect to the tower position." Office Action, Page 9. Regardless of what the Examiner thinks about the claim limitations, they must still be taught in the cited references to sustain a rejection.

Similarly, the Examiner finds that since MMDS systems were known at the time the application was filed, and since Csapo discloses a base station, it would be obvious to modify Csapo to obtain the claimed limitations. However, the Examiner did not provide a reason, suggestion, or motivation to modify Csapo, Talbot, or Bickley. Again, the Examiner is not complying with *In re Thrift* and *In re Lee*. Further, secondary considerations are found in the application itself. There was a great need that was unfulfilled in the MMDS systems. The MMDS systems used towers with heavy cable. The MMDS systems did not use fiber. The invention was an advance in the art that led to cost savings in the equipment. The towers are now lighter and can sustain more antennas. These reasons are not claim limitations. These reasons are evidence of secondary considerations that refute the statements of the Examiner. These reasons must be addressed by the Examiner.

If the Examiner continues to believe that any portion or portions of the claims can be rejected over Schwartz, Walsh, Csapo, Talbot, or Bickley, alone or in combination, or the Examiner otherwise disagrees with the Remarks above, Applicants specifically request that the Examiner respond to all arguments made in the Remarks section of this Response above, specifically identifying each numbered paragraph and including a detailed explanation of objective reasons for combining the references. Applicants request that the response provide a detailed and fact-based reasoning and explanation and not only include re-written form paragraphs from the MPEP. Such a detailed explanation is needed by Applicants so that Applicants can adequately respond to a continued rejection. Applicants thank the Examiner in advance for cooperation in this respect.

The references cited by the Examiner and made of record have been reviewed by Applicants. Applicants have no further remarks with regard to the cited references.

Based on the foregoing, it is submitted that the Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicants' attorney welcomes the opportunity to discuss the case with the Examiner in the event that there are any questions or comments regarding the response or the application.

This is intended to be a complete response to the Examiner's Office action mailed on November 30, 2004.

Respectfully Submitted,

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